PSIKOPEDAGOGIA
JURNAL BIMBINGAN DAN KONSELING
Vol.11, No.1, June 2022
p-ISSN 2301-6167
e-ISSN 2528-7206

DOI: 10.12928/psikopedagogia.v11i1.15162

The Effect of Deep Breathing Technique on Children's Concentration

Azmi Maulidah*, Very Julianto
***Correspondent Author**

Azmi Maulidah
Universitas Islam Negeri Sunan Kalijaga
Jalan Marsda Adisutjipto, Yogyakarta
Indonesia
Email: azmimaulidah.am@gmail.com

Very Julianto
Universitas Islam Negeri Sunan Kalijaga
Jalan Marsda Adisutjipto, Yogyakarta
Indonesia
Email: very.julianto@uin-suka.ac.id

Page
9-13

ABSTRACT

One of the developmental tasks a child should complete is to concentrate. However, some children failed to concentrate, causing them difficulty in processing the stimulus thoroughly. This study aimed to determine the effect of audiovisual training with deep breathing techniques on children's concentration. Applying the pretest-posttest control group quasi-experimental method, this study involved sixteen students who were assigned into experimental (n=9) and control (n=7) groups. Participants were recruited using the purposive sampling technique. The data were collected using digit span and analyzed using Mann-Whitney U. The study result showed that the deep breathing technique was effective in improving children's concentration. The result demonstrated the effect of audiovisual training with deep breathing technique on children's concentration, as shown by the significant digit span score of p = 0.003 (< 0.05). The result of this study is expected to be a helpful reference for school counselors to improve students' learning concentration.

Keywords: audiovisual, deep breathing, concentration, elementary school, student.

INTRODUCTION

Concentration is one of the developmental tasks a child should complete. Children who cannot concentrate may find it difficult to process stimuli properly. Lack of concentration causes children to fail to obtain benefits from the stimulus given to them (Jamaris, 2014). Concentration difficulty may also be caused by children's inability to process visual, auditory, and motor information. Children with concentration difficulty will likely fail to make a selection out of the received stimulus. Such a difficulty potentially hinders the child's learning process. Concentration is undeniably pivotal in children's learning activities (Ambarnianti, 2013). It has been linked to how memory works (Weschler, as cited in Colliflower, 2013). Concentration could be defined as a process in which individuals choose to focus on certain information while ignoring other information. One's memory requires a range of concentration levels. One's ability to concentrate is reported to be associated with individual differences in memory capacity. Individuals actively process information, store

information relevant to their jobs, and simultaneously manipulate the information.

There are approximately four million school-aged children who suffer from learning difficulties, and 20% of them face concentration difficulties. Children with concentration difficulty tend to daydream often and be easily distracted when trying to focus on a stimulus. A study conducted by American Psychiatric Association (APA) states that attention deficit, either with or without hyperactivity, ranged between 1-20% of school-aged children. Another study reports that around 32.96% of children suffer from attention deficit disorder.

According to Load (Hutchinson, Karageorghis, & Black, 2016). A combination of auditory and visual stimulus may better increase one's concentration when compared to a single stimulus. Bimodal stimulus (e.g., audiovisuals) may enhance higher perception than unimodal stimulus. Brame (2019) also suggests that video may also affect student's concentration. Attention and concentration appear to be inseparable from breathing exercise. This exercise may also affect one's cognitive and emotional aspects, in addition to Improving attention and reduce fatigue and anxiety (Ma et al., 2017). One of the breathing exercises that could be used is the deep breathing (Yokogama et al., 2018). This breathing type has been reported to be helpful for achieving a relaxing state and avoid stressful condition, as it is the extended form of concentration and awareness that leads to a relaxing state (Paul, Elam, & Verhulst, 2007).

Based on the background described above, the integration of audiovisuals and deep breathing technique may enhance children's concentration. This work specifically aims to see the effect of audiovisual training with deep breathing technique on children's concentration.

METHODOLOGY

Participants were sixteen children with learning concentration difficulty. They were assigned to experimental (n=9) and control group (n=7). Digit span was used as the research instrument due to its Ability to describe various aspects, such as the ability to accept a stimuli passively, focus attention, anxiety, intelligence, memory, and flexibility. This quasi-experimental study applied a pretest-posttest control group design. Data were analyzed using Mann-Whitney U.

RESULT AND DISCUSSION

The pretest and posttest result analysis of both groups in this study are presented in the following table.

Table 1.
Pretest and Posttest Digit Span

Audiovisual training with deep breathing technique		*Mean*
Experimental Group	*Pretest*	7.5
	Posttest	8.5
Control	*Pretest*	7.4
	Posttest	6.85

Table 1 above shows that the mean posttest score of experimental and control groups were 8.5 and 6.85, respectively, showing a score difference of 1.65 . The mean score of the experimental group was higher than that of the control group, meaning that the former possesses higher concentration level than the latter.

Table 2.
Hypothesis test: Mann Whitney U

Mann Whitney U	Sig (p<0,05)	description
5.00	0.003	Significant

As shown in the table above, the Mann-Whitney U score was 5.00 with a significance value of 0.003 ($p < 0.05$). In other words, audiovisual training with deep breathing technique affects the children's concentration when measured using digit span.

This study showed that audiovisual training with deep breathing technique may affect the children's concentration. This finding supports Idris et al. (2018), who stated that the audiovisual media may enhance children's concentration and improve the learning quality. In the same vein, Lauman (2003) suggests that the natural exposure to video

may improve one's concentration on tasks involving the processing of several stimulus or signs.

Audiovisuals were proven to enhance individuals' attention, as also reported by Sidaty, Larabi, and Saadane (2016), who proved that audiovisual media could attract visual attention better than merely visual media. In the same vein, Load (Hutchinson, Karageorghis, & Black, 2016) states combination of auditory and visual stimuli may better increase one's concentration when compared to a single stimulus. Bimodal stimulus (i.e., audiovisual media) may lead to higher perception than the unimodal stimulus.

Aspects of concentration in the digit span, i.e., short-term memory and anxiety, are significantly affected by the natural video. According to Ulrich(1993), a video presenting a natural environment may induce a relaxing effect on one's autonomous function, thus turning emotional and physiological desire into a recovery effect. The relaxing effect could be obtained from nature videos, such as flowing river, leaves, and chirping birds (Kaplan, 1995). In this study, the experimental group exhibited better concentrations than the control group after participating in audiovisual training with deep breathing technique. The finding is consistent with Bourrier (2018), who asserts that nature videos can improve one's memory performance, since it is believed that interacting with nature could be helpful for recovering human's primary information-processing device, i.e., brain. Watching a 10-minute nature video (Berman et al., 2008) in this study was proven to improve the participants' selective attention.

Deep breathing induces an effect similar to the nature video, i.e., relaxation and calmness. It also supports Ma (2017), who stated that diaphragmatic breathing could enhance cognitive performance and alleviate negative feelings and psychological stress among adult people. Deep breathing allows relaxation and self-concentration, minimizes stressful situations through a deep oxygen inspiration, and reduces expiration, thus increasing oxygen level in blood and inducing cleansing process of four primary motors: heart, lungs, liver, and kidney (Paul et al., 2007; Bragg, 1999). Similarly, Busch et al. (2012) suggest that intentional slow breathing can lead to relaxation. When the body is in a relaxed condition, the impulses transmitted to the brain may decrease, followed by a decreased brain activities and other body functions' activities. In this study, experimental groups exhibited higher concentration after participating in audiovisual training with deep breathing technique. Bragg (1999) also agrees that deep breathing can improve one's concentration by enhancing the brain performance. The deeper the oxygen inspiration, the deeper the concentration. Deep breathing also may also help turning negative emotions into positive emotions.

There are several factors that contribute to the success of this action research, including the adherence to research stages and the module. The training module was developed based on relevant theories and studies, feedbacks and suggestions from professional judgment when reviewing the content validity before the experiment took place. Another supporting factor was the support from the school, which facilitates easier process of participant recruitment, permit, and help when needed. The training team also contributes to the research success, in which trainers and observers could work together to achieve the research goal.

Despite its positive contribution, some limitations were also noticed. The concentration improvement obtained from the audiovisual training with deep breathing technique was categorized as moderate improvement, as the digit span score increased only by 1 to 2 points. This training was also conducted following Pilotti's (2014) minimum recommendation, i.e., watching nature videos twice. Meanwhile, the audiovisual training is reported to be optimal when involving watching nature videos for 144 times (Berman, 2008), and the deep breathing technique could be optimal when performed regularly with 6-10 times per minute (Ju & Lien, 2016).

CONCLUSION

Based on the analysis result, this study concludes that the audiovisual training with deep breathing technique could affect the children's concentration, as measured using the digit span. The result of this study is expected to be a helpful reference for school counselors to improve students' learning concentration.

REFERENCES

Ambarnianti, M. (2013). Pengaruh Penerapan Metode Pembelajaran Tandur Terhadap Konsentrasi Belajar Anak Kelompok B di TK Putra Harapan Bojonegoro. *Jurnal UNESA*, 2(2), 1-6.

Brame, C. (2019). *Science Teaching Essential*. England: Academic Press.

Bragg, P. C & Bragg, P. (1999). *Super Power Breathing for Super Energy: High Healthy & Longevity*. California: Health Science.

Busch, V., Magerl, W., Kern, U., Haas, J., Hajak, G., & Eichhammer, P. (2012). The Effect of Deep and Slow Breathing on Pain Perception, Autonomic Activity, and Mood Processing-An Experimental Study. *Pain Medicine*, 13(2), 215-228. doi: 10.1111/j.1526-4637.2011.01243.x

Colliflower, T. J. (2013). Interpretation of the WISC-IV Working Memory Index as a Measure of Attention. *Theses, Dissertations and Capstones*. Marshall University. mds.marshall.edu/etd/699/.

Hutchinson, J. C., Karageorghis, C. I., & Black, J. (2016). The Diabeates Project: Perceptual, Affective and Psychophysiological Effects of Music and Music-Video in a Clinical Exercise Setting. *Canadian Journal of Diabetes*, 41(1), 90-96. doi: 10.1016/j.jcjd.2016.07.009.

Idris, A, Shamsuddin, I, Arome, A, Aminu, I. (2018). Use of Audio-Visual Materials in Teaching and Learning of Classification of Living Things Among Secondary School Students in Sabon Gari LGA of Kaduna State. *Plant*, 6(2), 33-37. doi: 10.11648/j.plant.20180602.12.

Jamaris, M. (2014). *Kesulitan Belajar: Perspektif, Asesmen, dan Penanggulangannya bagi Anak Usia Dini dan Usia Sekolah*. Bogor: Ghalia Indonesia.

Ju, Y & Lien, Y. (2016). Better Control with Less Effort: The Advantage of Using Focused-Breathing Strategy Over Focused-Distraction Strategy on Thought Suppression. *Conciousness and Cognition*, 40, 9-16. doi: 10.1016/j.concog.2015.12.002.

Kaplan, S. (1995). The Restorative Benefits of Nature: Toward an Integrative Framework. *Journal of Environmental Psychology*, 15(3), 169-182. doi.org/10.1016/0272-4944(95)90001-2

Kaufman, A. (1994). *Intelligent Testing with The WISC-III.* New York: John Wiley & Sons.

Ma, X., Yue Z.Q., Gong, Z.Q., Zhang, H., Duan, N., Shi, Y.,Wei, G., & Li, Y. (2017). The Effect of Diaphragmatic Breathing on Attention, Negative Affect and Stress in Health Adults. *Frontiers in Psychology*, 8(874). doi: 10.3389/ipsyg.2017.00874.

Paul, G., Elam, B., & Verhulst, S. (2014). A Longitudinal Study of Students Perceptions of Using Deep Breathing Meditation to Reduce Testing Stresses. *Teaching and Learning in Medicine: An International Journal*,19(3). 287-292. doi: 10.1080/10401330701366754.

Pilotti, M., Klein, E., Golem, D., Eric, P., & Kaplan, K. (2014). Is Viewing a Nature Video After Work Restorative? Effects on Blood Pressure, Task Performance, and Long Term Memory. *Environment and Behavior*, 47(9). 947-969. doi: 10.1177/0013916514533187.

Sidaty, N., Larabi, M. C., & Saadane, A. (2016). Towards an Audiovisual Attention Model for Multimodal Video Content. Neurocomputing. doi: 10.1016/j.neucom.2016.08.130.

Suseno, M. (2012). *Statistika: Teori dan Aplikasi untuk Penelitian Ilmu Sosial dan Humaniora*. Yogyakarta: Ash-Shaff.

Thursina, C. CT. (2017). Reliability and Validity of Backward Digit Span for Elementary School Students Attention Deficit Screening at Yogyakarta*. Journal of*

*the Neurologica*l, 381, 188-373. doi: 10.1016/j.jns.2017.08.541.

Ulrich, R. (1993). *Biophilia, Biophobia, and Natural Landscapes.* Washington DC: Island Press.

Yokogawa, M., Kurebayashi, T., Ichimura, T., Nishino, M., Miaki, H., & Nakagawa, T. (2018). Comparison of Two Instructions for Deep Breathing Exercise: Non-Specific and Diaphragmatic Breathing. *Journal of Physical Therapy Science*, 30(4), 614-618. doi: 10.1589/jpts.30.614.

Wartella, E. A., Lovato, S. B., Pila, S., Lauricella, A. R., Echevarria, R., & Evans, J. (2019). Digital Media Use by Young Children: Learning, Effects, and Health Outcomes. In C. K. Olson & E. Beresin (Eds.), Child and Adolescent Psychiatry and the Media, 173-188. doi.org/10.1016/B978-0-323-54854 0.00016-3.

Wood, D. (2011). *Kiat Mengatasi Gangguan Belajar*. Yogayakarta: Ar Ruzz Media.